

Changes in Scholarly Communication: What Repository Programs Can Do for Faculty

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The Future of Libraries

- **What will academic libraries look like in the future?**
  - What information will they hold?
  - What services will they provide?
  - What infrastructures will there be?

- **Your Campus' Intellectual Output:**
  Libraries are helping to produce, collect, organize, and disseminate it

- **Product of Education and Research:**
  Diverse and voluminous
  Must be well-managed for the long run

- **Research, Learning, Communication:**
  Study/analyze contemporary academic processes

- **Repositories are proliferating:**
  Over 1300 Repositories listed in OpenDOAR in 8 yrs!

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The Problem - Revealed

- Much of a university's intellectual product never appears in a permanent, published form
- Exists as disorganized pockets of digitally born objects & media scattered among individual hard drives, departmental servers, and removable storage media across an institution
- While digital scholarly output reflects substantial investment of resources, assets, and effort, it:
  - Lacks curatorial stewardship;
  - May be inaccessible;
  - Exists on unsustainable hardware, software, or lacks individual support;
  - Needs future-proofing migration strategies

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Scholarly Research Content Types

Newer Types:

- Open access journals
- Virtual communities
- Research data sets
- Computer programs
- Digital audio/video
- Wikis, blogs, etc.
- Learning objects / Instructional
- Simulations, visualizations and virtual models
- Web sites

- Other myriad information resources that are created in academic institutions

More Traditional:

- Electronic theses / dissertations
- Organizational documents
- College and university archives
- Annual and organizational reports
- Institutional planning and evaluation documents
- Service publications
- Research proposals
- Research and technical reports
- Pre-print research
- Post-print research
- Working papers
- Conference papers
- Lecture and symposia materials

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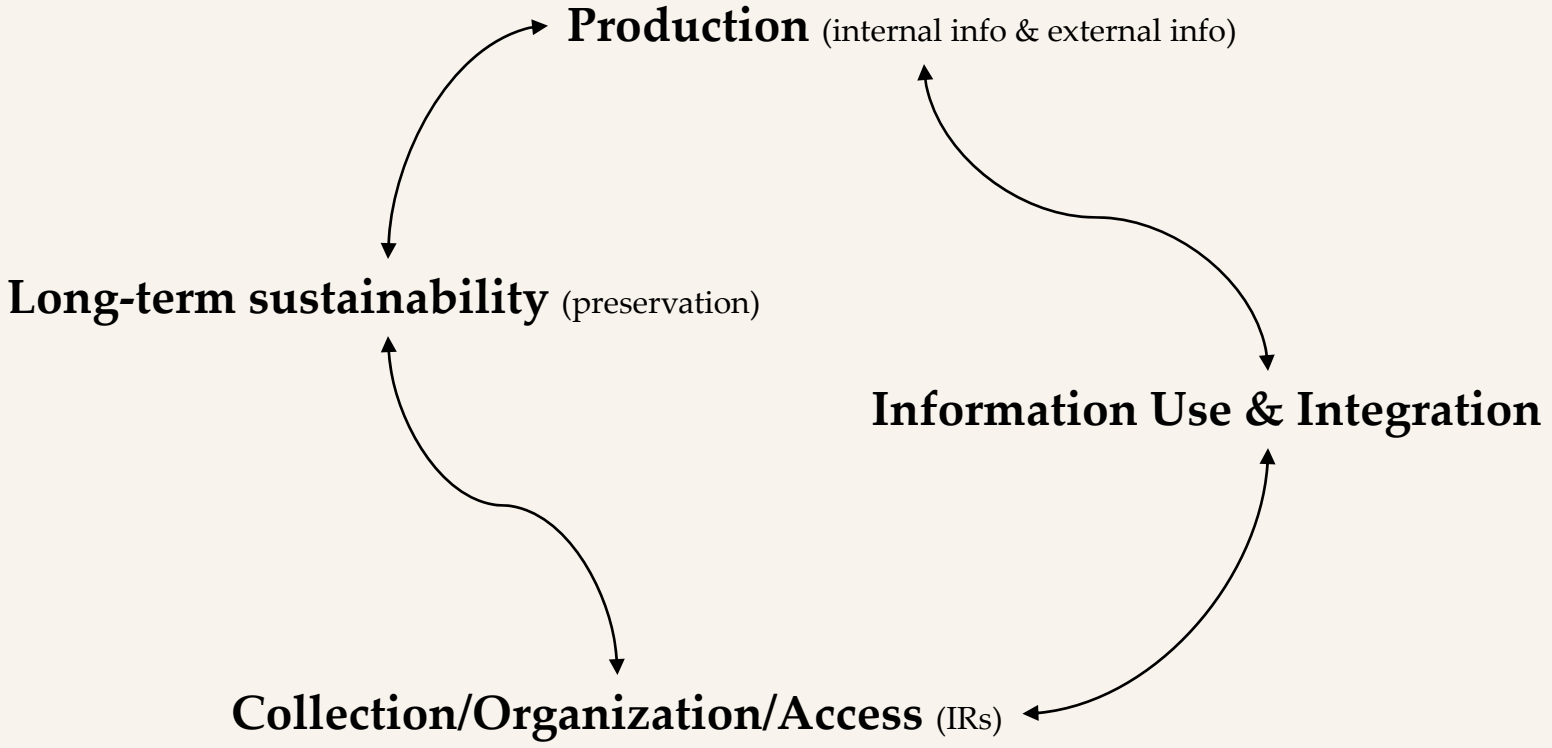
The Life-Cycle of Information



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Institutional Repositories

"*Down to Brass Tacks:*"

1. Enhance access to the faculty's intellectual output

2. Provide stewardship for digital scholarship and research-related content

3. Accelerate the use of scholarly communication across institutions

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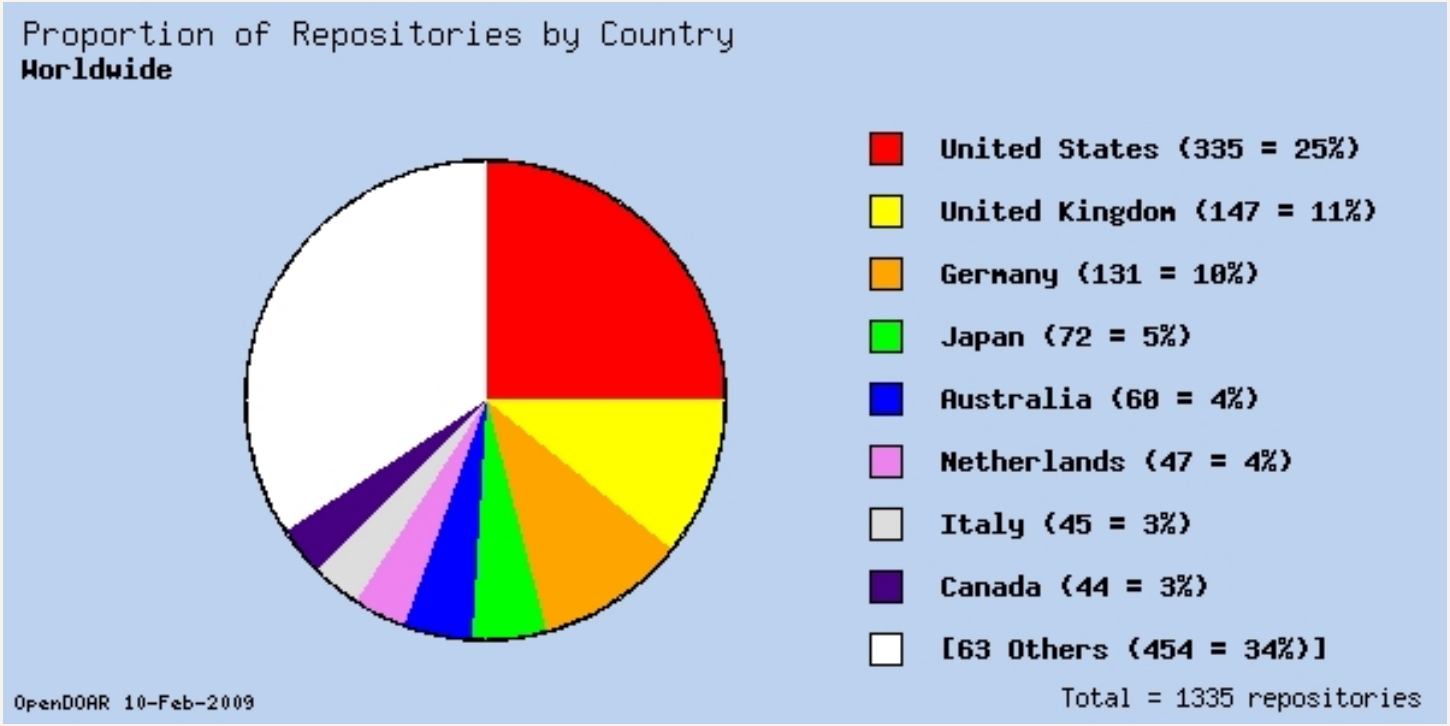
Institutional Repositories

As a trend:

335 registered IRs in the U.S. – 1,335 worldwide. IRs started in ca. 2000



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Organization, Access, Dissemination

Repositories:
for capture of the university intellectual output in support of its teaching and research missions

SMARTech
Scholarly Materials And Research at Georgia Tech

- **SMARTech (DSpace, 8/04) – 2007/08 Stats:**
  - 23,000+ objects
  - 38 communities/85 sub-communities/325 collections
  - 1,399,135 items viewed
  - 1,156,861 items downloaded
  - 480,926 searches and 7,440 items added

- **SMARTech is the:**
  - **In Top 7 largest** of 81 institutional repositories in the United States
  - **Top 3%** of any repository platform in the world (#30)

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Four Types of Intellectual Output

The four major categories of output being reviewed are:

1. **Faculty and researchers' scholarly communications**
   (i.e., pre-/post-prints, journal articles, conference papers, research reports, technical papers, etc.)

2. **Student intellectual output**

3. **Learning objects and other multimedia-based works**

4. **Digital research data sets**

- These resources pose new challenges, also present new opportunities
- Libraries are extending capabilities to manage these resources for future
  - becoming integral to knowledge dissemination processes in academia

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Faculty & Researchers' Scholarly Communications

- Formal (i.e. Journal publications, research papers, technical reports, working papers, conference papers, lectures, records, personal papers)
- Informal (i.e. Listservs, threaded discussion lists, chat, virtual community sites/ collaboration spaces/social networking, blogs, wikis, e-mail, etc.)
- Conversational/transactional elements of research process more important as libraries capture disciplinary debate and development
- We need to study informal modes, design solutions for capturing and providing additional access to these resources

IR can be a central tool in organizing and accessing both formal and informal scholarly communications. Increasingly, they will be created, transmitted, and maintained in many digital forms

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Student Intellectual Output

- **Undergraduate Research Programs**
  - Growth of UG research - programs, scholarships, awards, int'l research
  - GT: Submit output to SMARTech

GT Examples:

- Summer Undergraduate Research Experience
- Undergraduate Research Scholars Program
- Undergraduate Research Award

The Tower: GT's Journal of Undergraduate Research (electronic)

* Collaborations with Director of Undergraduate Research, LCC

GT Library East Commons: Student creative activity, research/digital renderings: SMARTech

The Technique (student paper) w/GT Student Publication Bd, OIT

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Digital Research Data Sets

- New class of digital-born output: digital data sets generated from modern research processes

- **Major Disciplines**:
  - Sciences and engineering fields
  - Social sciences
  - Medical disciplines
  - Humanities
  - Behavioral Sciences

- **Examples**:
  - Geospatial data
  - Social science / economic, statistical data
  - Historical / observational data
  - Biological / medical data
  - Astronomical data
  - Nuclear physics data
  - Genomic and protein data

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Digital Research Data Sets

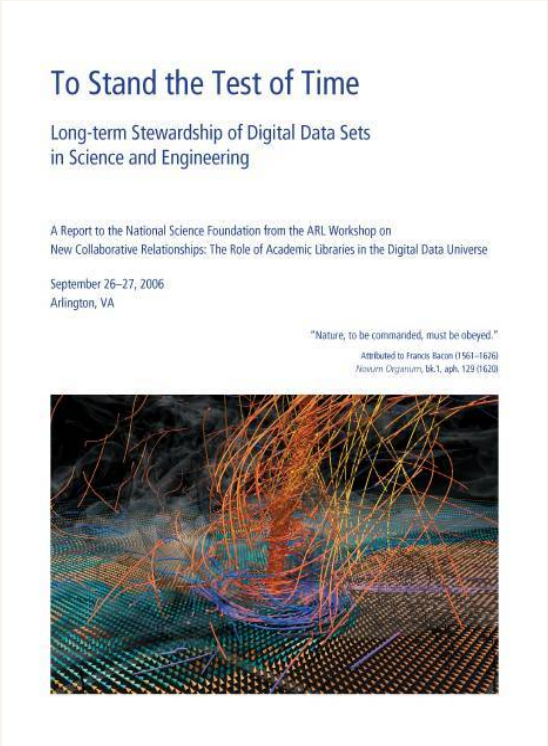
Is Your Scholarship linked to Your Data?

Why?

1. Research data is a primary source that must be made available to support and advance research
2. Data is extension of scholarly publications, e.g., raw, digital data accompanying journal articles and technical papers

Challenges:

- Need clear university and agency policies, and incentives to share/link data (NSF, NIH)
- Need Scholar/Library/IT Partnerships
- Data curation tools, interoperable technologies
  - tools for data / metadata extraction, database emulation, data provenance tracking



Report of the American Council of Learned Societies Commission on Cyberinfrastructure for the Humanities and Social Sciences

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Schol Comm Svcs: EPAGE@Tech

- New Library Services:
  Support creation, use of digital resources in new/different ways
- **Publishing**
  Electronic Books
  eJournals
  eConference Proceedings
- **Capturing**
  Instructional Materials
  Multimedia
- **Hosting**
  Conferences
  Symposia
  Lecture Series

Cultivating active partnerships with faculty is how libraries will continue as highly valued hubs of information services

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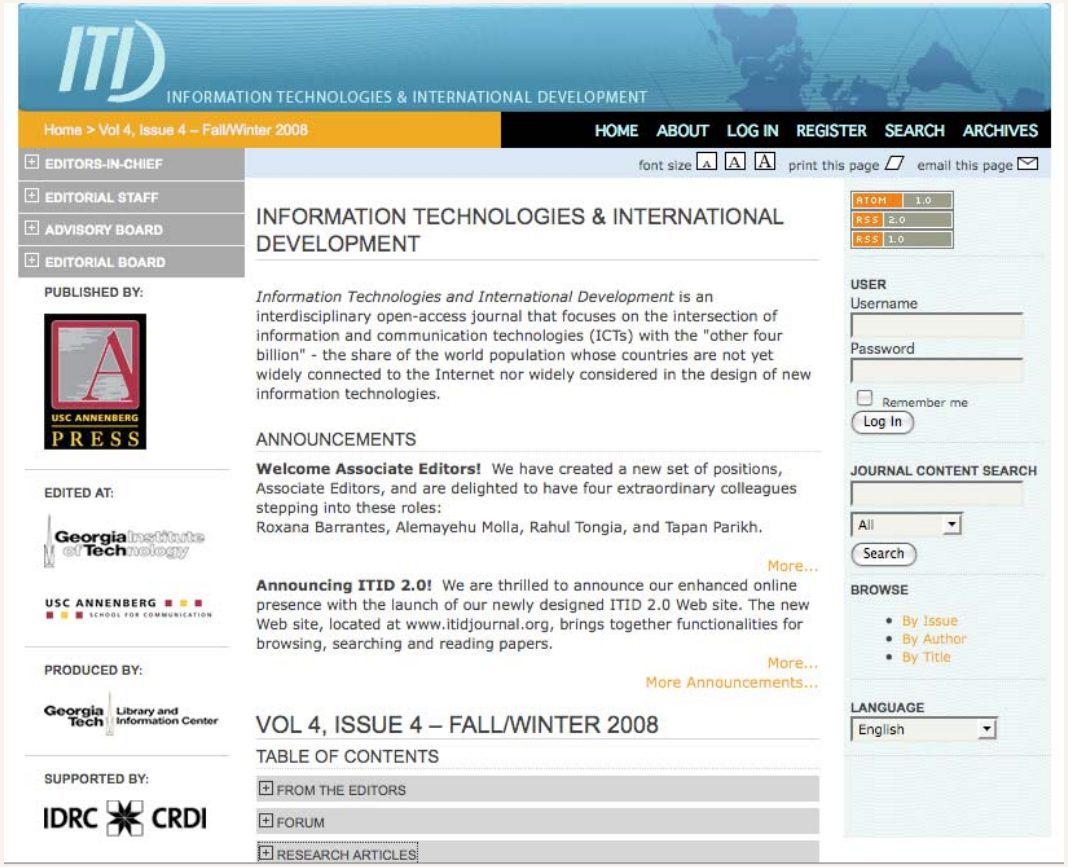
Journal Publishing



USC Annenberg Press, GT Library & Faculty Partnership

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Conference Proceeding Publishing

Partner with DLPE/Conference Center

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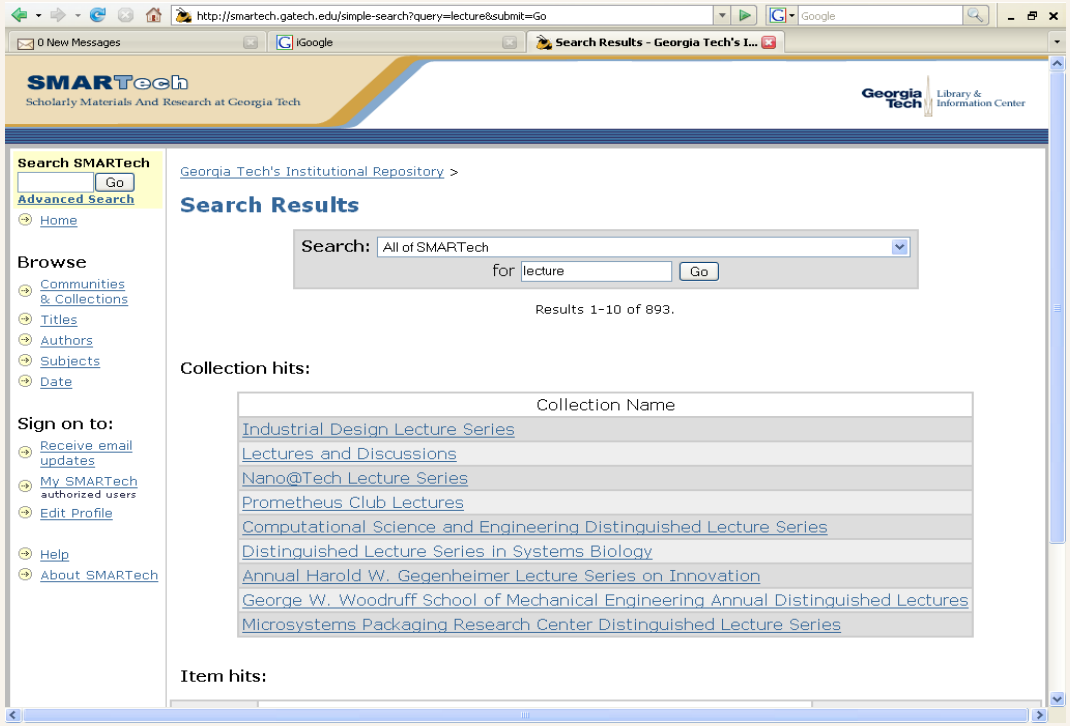
Lecture Series & Symposia



- Microelectronic Res. Ctr. Nano@Tech Lecture Series
- Industrial Design Lecture Series
- Distinguished Lecture Series in Systems Biology

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GALILEO Knowledge Repository:
A Federated Repositories Initiative

- 4 repositories at 4 USG research/regional universities
  - Plus, 4 new hosted repositories for USG schools
- Shared standards promote use and interoperability
  - Metadata, Ontologies (terms), and Harvesting
  - Search and Discovery
  - Rights management
- GKR Services
  - Searchable repository of harvested metadata
  - IR hosting service (DSpace): USG schools (GT)
  - Locally managed content
  - IR-related services:
    - Copyright research, Digitization,
    - Content submission, Preservation

GKR Distributed Hosting Model

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USG Faculty IR Interest Survey

- GKR sponsoring a faculty survey to assess perceptions, experiences w/IRs, author's rights, OA publishing activity
- Learn about perceptions held by faculty about IRs and Open Access models and build business strategies to address them
- Results analyzed by GKR Outreach and Evaluation Committee
  - Used to improve GKR the technologies, services, marketing

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GKR's IR Hosting Service (DSpace)

- Service Maintained by GT Library Technology Staff
- Host sites for: MCG, VSU, ASU, CCGA
- Storage server provided
- Local control for each hosted institution:
  - Assisted by Web Developer/GRA at GT
  - Will collaborate with hosted sites' staff:
  - "front-end" design, including user interfaces, style sheets, branding graphics, and the community/collections structure
- Supports unique interface designs with distinctive branding and local institutional communities, collections

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IR-related Services

Why?

- To Reduce Barriers to Collecting Scholarly Content
  - Rights management assistance (GT)
  - Digitization (UGA/DLG)
  - Content submission (GT/UGA/VSU)
  - Preservation (MetaArchive/GT)

*Services resulted from the USG-wide GKR stakeholder meeting of November 30, 2007, in Athens, GA, with web and phone access across the state

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IMPACT: GKR

- Promote info sharing & discovery of research among 35 USG institutions from a single web site
- Increase USG visibility, prestige through global exposure to its digital scholarship & research
- Improve access to learning for the citizens of Georgia at large
- Create outlet for new forms of instructional media & scholarship, including open access scholarship
- Provide stewardship for the least permanent (i.e. non-published) elements of the USG's intellectual works
- Demonstrate the effectiveness of USG institutions & their faculty for assessment & accreditation purposes through enhanced access to their scholarly works

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Concluding Thoughts…

- Libraries can be information and knowledge management centers for faculty
  - **This includes production and dissemination**

- In addition to our books and journals, there's a whole world of other information resources out there! Think openly about what information is being created

- Libraries should be more about "process," not just "product." Information has a Lifecycle. Libraries can add value in each phase of scholarly/research work

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Thank you!

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Don't Forget:

4th International Conference for Open Repositories
At Georgia Tech – May 18-21, 2009
http://www.openrepositories.org

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